

31. REDESCRIPTION OF *TETRAGNATHA VIRIDORUFA* GRAVELY FROM KERALA, INDIA, ARANEAE: TETRAGNATHIDAE

Tetragnatha viridorufa Gravelly, a common species in the forests and paddy fields of Kerala, was first reported by Gravelly (1921) from Barkuda Islands, Orissa. As a predominant predatory spider in our agricultural fields, *T. viridorufa* bears much importance in biocontrol studies. However, as there is no detailed illustration in Gravelly's description, its identification is usually difficult. During our study on the spiders of Ernakulam district in Kerala, we came across several specimens of *T. viridorufa*. A detailed description and illustration of *T. viridorufa* collected is given here.

Collection and preservation of the spiders was done following Tikader (1987). The material was studied using a Stereozoom binocular microscope, model Leica MS-5. All measurements are in millimetres, made with an eyepiece graticule.

Abbreviations used are as follows: ALE = Anterior lateral eye, AME = Anterior median eye, PLE = Posterior lateral eye, PME = Posterior median eye; Spination: dvpr = dorsal-ventral-prolateral-retrolateral, MOQ = Median ocular quadrangle, L = Length, W = Width, H = Height, SR = Semicircular ridge, TT = Truncate tooth.

Tetragnatha viridorufa Gravelly

(Figs 1-19)

1921 *Tetragnatha viridorufa*: Gravelly, *Rec. Ind. Mus.* 22: 411 and 434

1987 *Tetragnatha viridorufa*: Tikader, *Handbook of Indian spiders*: 222

Cephalothorax reddish-brown, longer than broad. Abdomen elongate, yellowish-brown in male, dorsum reddish and lateral sides bright greenish in female. Legs longer, slender and yellowish-brown.

Measurements (in mm): **Male**: Total length: 10.75; Cephalothorax 3 L, 1.5 W, 1.0 H; Abdomen 7.6 L, 1.2 W, 1.0 H. **Female**: Total length: 10.40; Cephalothorax 3.2 L, 1.9 W, 1.0 H; Abdomen 7.1 L, 1.7 W, 1.1 H.

CEPHALOTHORAX

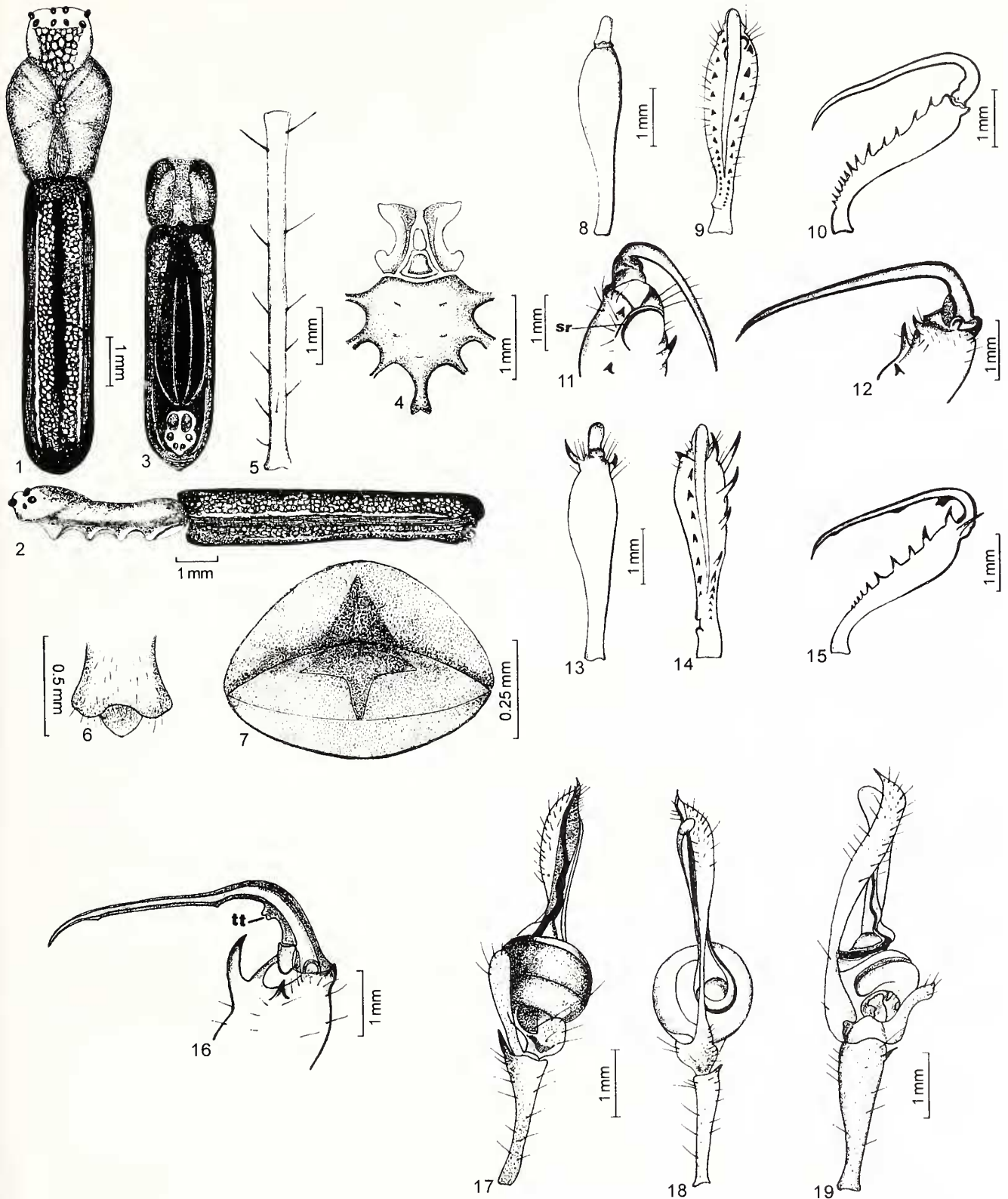
Male: Reddish-brown, longer than broad. Cephalic region rounded anteriorly, broadest basally and slightly concave dorsally. Cephalic region separated from thoracic region by a short indentation. Eyes eight in two rows, both rows recurved, MOQ slightly wider at the anterior end. Anterior eye row longer than posterior.

Eye separation AME-AME 0.12, AME-ALE = 0.22, PME-PME = 0.10, PME-PLA = 0.15; Eye diameter AME 0.18, ALE = 0.15, PME = 0.17, PLE = 0.15. Eye row length: AE = 0.98, PE = 0.94. Cheliceral length = 4, fang = 3.2. Sternum, Labium, Maxillae as in female. Chelicerae long, slender and widely divergent; first dorsal spine and subapical spine subequal in length, the former being slightly shorter and thicker than latter and much longer than other spines. Fang armed with a strong truncate tooth on the inner side of the basal bend. Legs yellowish-brown, long and slender. Metatarsus I / Tarsus I = 6.73. Leg formula 1 2 4 3. Palp yellow, bulb transverse; length of the palp longer than femur III, about one half of femur I. Cymbium as long as tibia, broader at the apical half; paracymbium cleft apically, four times longer than broad. Apex of conductor thin and shortly curved upwards. Embolus elongate and thin (Figs 17-19).

Female: Reddish-brown, longer than broad. Fovea distinct and deep, with two lateral furrows converging to it from anterior end. Eyes eight in two rows, both rows recurved, anterior row longer than posterior row. Ocular quadrangle longer than broad, slightly wider at the anterior end. Clypeus height 1.3 times AME diameter. Sternum longer than wide, brownish-yellow, pointed behind. Labium longer than wide, similar in colour to sternum, apical end bluntly rounded, basal end with lateral indentations. Maxillae yellowish-brown, longer than wide; distal end with lateral projections having a longitudinal ridge midventrally (Fig. 4). Chelicerae with 15 teeth on the outer margin and 13 teeth on the inner margin. 7 basal teeth on outer margin and 6 basal teeth on the inner margin are smaller and closely set. Chelicerae long, slender and widely divergent; first dorsal and ventral teeth much larger than others (Figs 8-12). A semicircular ridge extends between first dorsal and ventral spine (Fig. 11). Fang unarmed. Eye diameter ALE = 0.13, AME = 0.15, PLE = 0.13, PME = 0.14. Eye separation ALE-AME = 0.22, AME-AME = 0.13, PME-PLA = 0.18, PME-PME = 0.11, AME-PME = 0.12. Eye row length AE = 1.02, PE = 0.91. Length of ocular quadrangle 0.36. Cheliceral length = 4. Legs longer, slender and yellowish-brown. Leg formula 1 2 4 3. Spination of Tibia I dvpr = 2-2-5-4, Femur I dvpr = 1-2-9-5 (Fig. 5)

ABDOMEN

Male: Abdomen yellowish-brown, elongate and cylindrical. Abdominal tip rounded, not exerted



Figs 1-19: *Tetragnatha viridorufa* Gravely: ♀ 1. Dorsal view, 2. Lateral view, 3. Abdomen - Ventral view, 4. Sternum with labium and maxillae, 5. Femur I, 6. Epigynal fold, 7. Internal Genitalia, 8. Chelicerae - Dorsal view, 9. Chelicerae - Ventral view, 10. Chelicerae - Lateral view, 11. Chelicerae - Anterior end enlarged - ventral view, 12. Semicircular ridge - Lateral view, 13. ♂ Chelicerae - Dorsal view, 14. ♂ Chelicerae - Ventral view, 15. ♂ Chelicerae - Lateral view, 16. ♂ Chelicerae - Anterior end enlarged - Lateral view, 17. ♂ Palp - Dorsal view, 18. ♂ Palp - Ventral view, 19. ♂ Palp - Lateral view.

Table 1: Measurements in mm for *Tetragnatha viridorufa* Gravely (♂)

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	9.00	1.10	9.30	10.10	1.50	31.00
II	6.05	1.00	5.35	5.75	1.15	19.30
III	3.90	0.72	2.51	2.95	0.89	10.97
IV	7.15	0.71	4.95	5.25	0.91	18.97
Palp	2.1	0.51	1.10	—	1.40	5.11

Table 2: Measurements in mm for *Tetragnatha viridorufa* Gravely (♀)

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	9.11	1.21	9.20	10.0	2.40	31.92
II	6.52	1.00	6.10	6.81	1.52	21.95
III	4.30	0.72	2.52	3.13	1.12	11.79
IV	7.10	0.68	6.00	6.11	1.50	21.39
Palp	1.51	0.51	1.21	—	1.20	4.43

beyond spinnerets. Lateral margins smooth except three posterotransverse striations near spinnerets. Venter yellowish, book lungs brown, longer than broad. A transverse black patch in front of spinnerets ventrally.

Female: Elongate, dorsum reddish and lateral sides bright greenish. Abdominal tip blackish, slightly projecting beyond spinnerets. Venter yellowish-brown. Epigynal fold short, distal fold wider than long, with a conical tip. (Figs 1-3)

Distribution: India: Villivakulam, Chingleput district; Barkuda island, Ganjam district; Balugaon and Balighai, Puri district, Orissa; Ernakulam, Thattakkad Bird Sanctuary, Bhoothathankettu; Kerala.

Natural History: Nocturnal, collected from coconut leaves hiding under the leaves; colouration of the abdomen helps in concealing its presence.

Material examined: India: 2 ♀♀, ♂, Moolampilly Is., Ernakulam, 26.ii.2001, Habitat: coastal ecosystem, Coll. K. Sunil Jose.

2 ♀♀, 2 ♀♀, Bhoothathankettu, Kothamangalam, 5.xii.2000. Habitat: Evergreen forest, Coll. K. Sunil Jose.

1 ♂, 2 ♀♀, Thattakkad Bird Sanctuary, 10.iv.2001. Habitat: Evergreen forest, Coll. Samson Davis.

ACKNOWLEDGEMENT

We thank Principal Rev. Fr. George Koyikara C.M.I., Sacred Heart College, Thevara, Kochi for providing facilities.

December 7, 2001

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32. ON TWO INTERESTING MARINE CRABS (DECAPODA: BRACHYURA) FROM MANDVI, KUTCH

In connection with studies on animal-sediment relationship, involving burrows made by polychaetes, crustaceans and molluscs, crabs were collected by one of us (BGD) from the intertidal zone around Mandvi region (22° 55' N, 69° 20' E) in the Gulf of Kutch. A total of seven species were collected and identified as follows:

1. *Matuta lunaris* (Forskal), 2. *Matuta planipes* Fabricius, 3. *Portunus tenuipes* (De Haan), 4. *Ocypoda ceratophthalma* (Pallas), 5. *Ocypoda platytarsis* Milne-Edwards, 6. *Ocypoda rotundata* Miers, and 7. *Plagusia depressa* var. *squamosa* (Herbst).

Chhapgar (1957a, b, 1958, 1961, 1968, 1979),